Georges Chebly

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Education

University of Massachusetts Amherst - Honors College May 2025
BS Mechanical Engineering, Minor Computer Science, **GPA: 3.97/4.00**

Relevant Coursework: Computer Systems Principles (C), Data Structures, Dynamics, Intro to Electrical Engineering, Design of Mechanical Components, Fluid Mechanics, Manufacturing, Statistics and Probability, System Dynamics, Design of Assemblies, Advanced Robotics

Engineering Skills: Prototyping, SolidWorks, Ansys, AutoCAD, 3D Printing, Additive Manufacturing (FDM), Machining
Computer Skills: ROS (Python), Matlab, Java, C, R, LaTeX, Microsoft Suite, International Computer Driving License(ICDL)
Languages: Arabic (Native), French (Fluent), English (Fluent)

Leadership & Projects

Guide Dog Robot – Capstone Project Aug 2024 – Present

- Developing a 15 kg power-efficient guide dog robot with advanced mobility features for Blind and Low Vision individuals
- Controls Lead setting up the CAN bus communication using the MD80 v3.0 motor controller
- Calculating the forward and inverse kinematics and inverse dynamics to select actuators (AK80-9)
- Design optimization to fit batteries, cameras, computers, and IMU within the robot's body

6 DOF Cable-driven Robotic Arm – DaRos Lab at UMass May 2024 – Present

- Implementing a cable-driven mechanism using steel cables extended from the robot's shoulder to distal parts
- Developing and testing capstan mechanisms to minimize mass and inertia while eliminating backlash and noise
- 3D printing using Carbon Fiber & PLA and assembling CNC-manufactured gears and components

Design of a Wrench (from scratch) – MIE313 Project Sept 2023 – Dec 2023

- Designed a custom wrench that wrights 0.75 Oz and has a flat screw as an additional functionality
- Developed design using SolidWorks, and conducted FEA using Ansys to simulate the wrench's behavior when subjected to ideal and perpendicular torques before testing day
- 3D printed the jaw using FDM and manufactured the aluminum handle of the wrench in the machine shop using bandsaw, milling, and drilling machines

Team Leader – UMass Robotics Team Sept 2023 – Present

- Managed a team of 10 to set goals and assign tasks, ensuring timely project completion
- Led the development of a humanoid from the torso up using OnShape — 7 DOF Arm, neck and body
- Integrated numerous mechanisms such as belt transmission, capstan drive, link mechanism…

Work Experience

Undergraduate Teaching Assistant – Statics and Dynamics Jan 2023 – Present

- Helped 300+ students through emails and weekly office hours (5 hours/week)
- Proctored 10+ exams, including accommodations for students with disability services
- Corrected and graded homework assignments and provided feedback

Software Robotics Intern - Open Avenues, Outrider Technologies Feb 2023 – Apr 2023

- Created a ROS launch file navigating the robot in a simulated yard and generating a map using LiDAR sensors in RViz and Gazebo
- Established communication between publisher and subscriber nodes over a specific topic
- Successfully wrote nodes to initialize the robot's position and control its motion using the Actionlib library

BMS/SCADA Engineer – ITEC, Siemens Qatar Solution Partner May 2022 – Jun 2022

- Development of PLC, SCADA/HMI programs to perform specific functions using Siemens TIA V17 portal
- Tested and commissioned 40+ HVAC automation systems (FCUs) in the View Hospital in Qatar
- Prepare BOM for 10+ floor electrical panels containing electromechanical components such as circuit breakers, relays…

Activities & Interests: UMass 4CCCL, Jiu-Jitsu, Analyzing Stocks & Cryptocurrencies, Soccer, Piano